

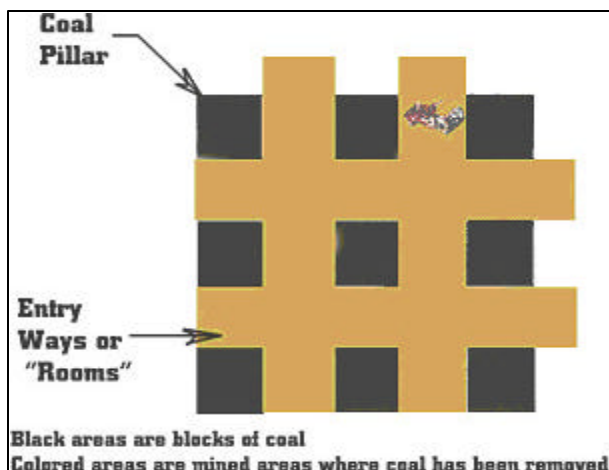
<b>Title</b>	<b>TYPES OF COAL MINING</b>
<b>Level</b>	Middle/High School
<b>Subject</b>	Earth Science / Environmental Science
<b>Duration</b>	Will vary according to amount of detail instructor wishes to use.
<b>Objective</b>	Students will gain and demonstrate knowledge of the process used in mining coal and the three main types of mining.
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➤ Three types of mining

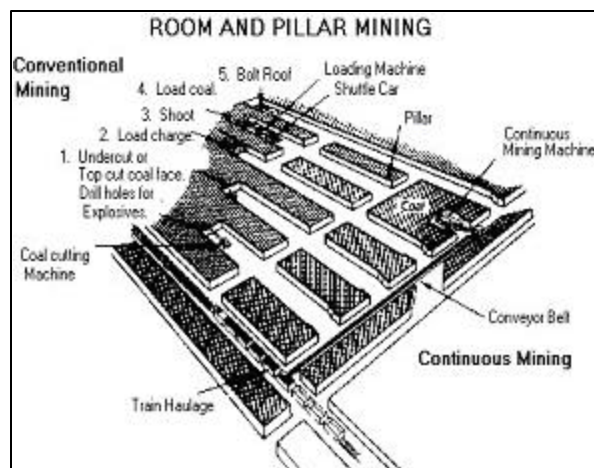
**I. Room and Pillar**

This is a type of mining in which “rooms” are cut out of the coal bed/seam and large pillars or columns of coal are left behind to support the mine roof. A machine called a continuous miner is used to cut through the coal, and immediately load the coal into a shuttle car that takes it to a conveyor belt, finally transporting it to the surface. Most mines in the U.S. use this method for mining coal.

These diagrams illustrate how room and pillar mining is completed.



A grid-like pattern is formed. Rooms are 20 – 30 feet wide and pillars are 20 – 40 feet on a side.



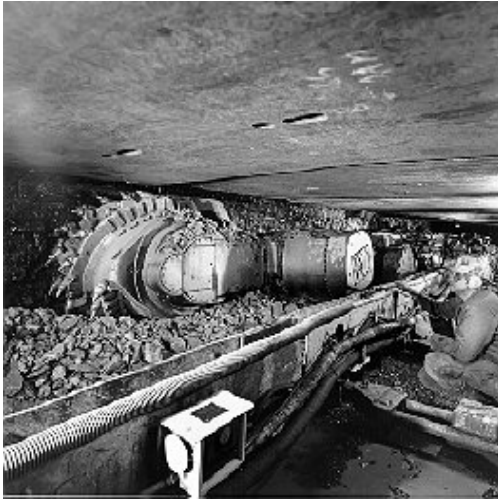
Notice the comparison between the old outdated conventional mining methods versus the modern method of continuous mining.

\* Illustrations are from the *United Mine Workers of America* collection

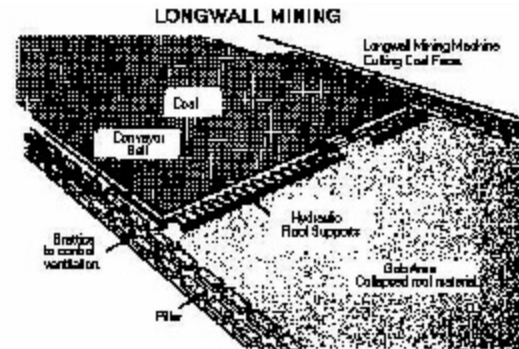
## II. Longwall

This is a type of mining in which a large cutting machine moves back and forth along a wide area of exposed coal (longwall). The area to be mined can be up to 10,000 feet long and 500 – 800 feet wide.

Here are some photos and diagrams which demonstrate how longwall mining is completed



This is a photo of a continuous mining machine. It contains rotating cylinders studded with tungsten carbide bits which cut the coal from the seam.



The longwall can be up to 10,000 feet long and 500 – 800 feet wide.

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### III. Surface Mining / Strip Mining (or just below the surface)

This third type of mining is different from the other two because the coal is extracted from the surface of the ground. It involves removing layers of soil and rock above the coal seam. This can cause tremendous damage to the surrounding ecosystems and all organisms that live within those ecosystems. The coal mining companies, before they may even begin to start mining, must supply a plan on how the land will be reclaimed – returned to a condition as good or better than when mining began.

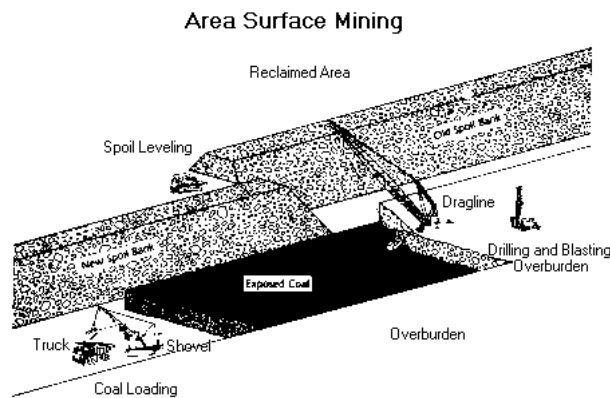
These are illustrations of strip mining (left) and the process of reclamation and hydroseeding (right). In the green material shown, a combination of grass seed, fertilizer, and water are being added to the soil.



**Strip Mining**



**Reclamation and Hydroseeding**



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